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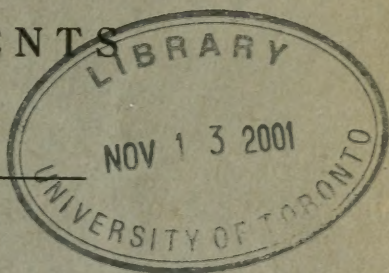
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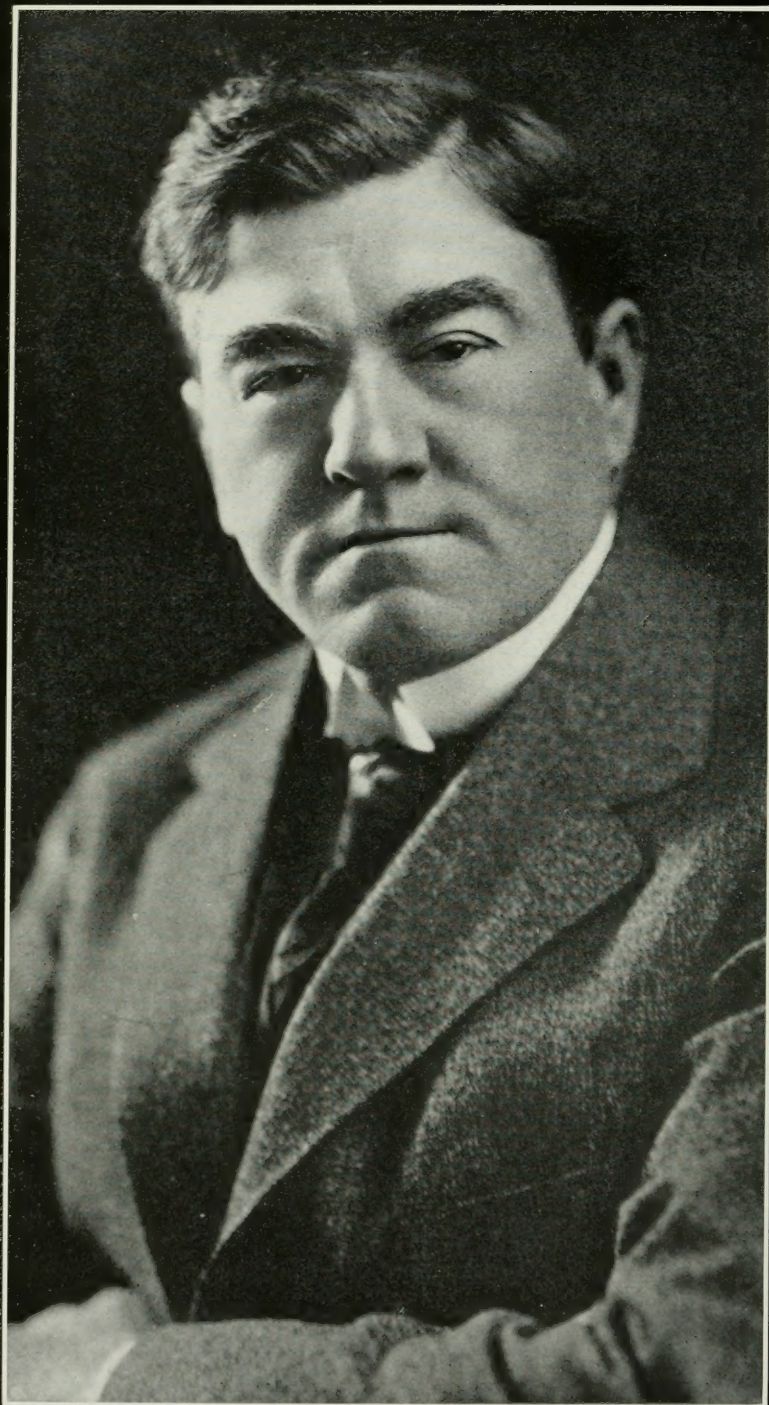
A Sketch of the Life and Work of
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A MONTHLY JOURNAL DEVOTED TO THE CHEMISTRY
PHYSICS AND THERAPEUTICS OF RADIUM
AND RADIO-ACTIVE SUBSTANCES



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JOSEPH M. FLANNERY

JULY 18, 1867—FEBRUARY 18, 1920

RADIUM

A MONTHLY JOURNAL DEVOTED TO THE CHEMISTRY, PHYSICS AND
THERAPEUTICS OF RADIUM AND RADIO-ACTIVE SUBSTANCES

Edited and Published by Charles H. Viol, Ph. D., and William H. Cameron, M. D.
with the assistance of collaborators working in the fields of
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VOL XIV

MARCH, 1920

No. 6

A SKETCH OF THE LIFE AND WORK OF JOSEPH M. FLANNERY.

Joseph M. Flannery, President of the Standard Chemical Company, the largest producer of radium in the world, died at 8 o'clock on the morning of February 18th at his home in Pittsburgh.

Fifty-two years of age, and a life-long resident of Pittsburgh and its immediate vicinity, Mr. Flannery had earned a place for himself in the steel industry before he became the first man to produce radium in the Americas and the largest single producer in the world.

In the steel world, Joseph M. Flannery will long be remembered by his presentation of vanadium as an alloy for steel; and for the way in which he quickly proved its advantages and secured its adoption and use in important undertakings.

Prior to 1904 he had been known only as a conscientious and respected member of the firm of undertakers owned and managed by his brother, James J. Flannery and himself. In that year he sold out his interest in that work and obtained control of a bolt specially designed as a stay bolt for locomotives.

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To discover the best that technical men had to offer to make these bolts as unbreakable as possible, Mr. Flannery made a trip to the leading steel centers of the world. In his studies on the subject, he had been interested in the famous Damascus swords and in Soligen fencing foil blades, made in Northern Europe. Technical men had reported that an analysis of the steel in these famous old swords showed traces of what was known as vanadium. A search of the world for a supply of vanadium sufficient to try its commercial use had been futile, and modern steel men ascribed the excellence of those famous old swords to some personal skill in the makers.

While he was in London, however, Mr. Flannery heard that a mine said to contain vanadium in quantities ample for commercial purposes was to be had high in the Andes Mountains in Peru.

Instantly he returned to Pittsburgh and arranged to go to Peru. Inspection showed the mine was all that had been claimed for it in London. He had but \$20,000.

Realizing the psychological effects of gold, and especially in a mountain town far from the commercial centers of the world, Mr. Flannery quickly obtained an old carpet bag, converted his money into gold coin, went to the home of the mine owner and dumped the whole glittering mass upon his office table.

Without an unnecessary word the young Pittsburgher reached for a rule and divided the pile of coin into what seemed two equal parts.

"That half for your mine," he said "This half to improve and to work the mine—and a good job for you at a big salary to run it for our Company."

The Peruvian was won. The deal was closed then and there and Mr. Flannery had possession of a commercial quantity of an alloy which he believed would greatly improve his stay bolts.

Careful and extended experiments soon proved to the Flannerys they had more; that they had a wonderful new alloy for steel. Their experiments convinced them that if vanadium were used, steel makers could obtain greater strength and greater resistance to strains of all kinds, without increasing the size of any steel part.

How to convince the steel makers of these facts was now the proposition confronting the brothers.

While his brother, James J. Flannery, took charge of the financial and mining interests, Joseph M. Flannery planned and conducted, single-handed, what was one of the most dramatic and successful campaigns of education and salesmanship the steel world has known.

There were then three great projects, widely different, in which the country, and especially steel men, were greatly interested.

The Panama Canal and the Quebec Bridge were under construction. Henry Ford was manufacturing his low-priced automobiles.

Mr. Flannery determined to try to have vanadium used in all of these. His idea proves the manner of the man, his ability to make important decisions quickly and his faith in himself.

Mr. Flannery went to the Panama Canal. He was presented to the Technical staff of Colonel Goethals and during one day talked with each of them who would have to do with large quantities of special steels. That one day with these engineers was all that Mr. Flannery needed.

His methods won. More than a year later, and only after the most exhaustive tests of Mr. Flannery's facts, Colonel Goethals placed orders for vanadium steel for the hinges for the gigantic lock gates and for other important parts of the lock gate construction, that aggregated nearly 5,000 tons of vanadium steel. The engineering world was astonished; but that order made the American Vanadium Company a power in the steel world, and today, ten years after that order for vanadium steel was placed, the gates of the Panama Canal, as they swing on their vanadium steel hinges, are one of the most beautiful, perfect and interesting products of the steel makers of America and the world.

The engineers of the Quebec bridge, unlike Colonel Goethal's staff, would not even consider vanadium steel. It would be inaccurate to say the first Quebec bridge collapsed because vanadium steel was not used, but it is not unfair to recall that the steel men who could not or would not see the merits of vanadium steel as

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Mr. Flannery presented them, did not see that their designs were so faulty their bridge collapsed.

To convince Henry Ford, Mr. Flannery tried other methods. He proved that by using vanadium steel he could reduce the weight of his car by some twelve hundred pounds and as a supplement to many technical proofs Mr. Flannery took some Ford cars made of his new steel to a high cliff and, in the presence of Mr. Ford's staff, had them literally thrown over the precipice. The results vindicated all that he had predicted. It was impossible to break the steel. It would bend and twist, but it could not be broken. The Ford Company adopted and gave wide publicity to the fact that its car was a Vanadium steel car. Today practically all the leading automobiles of the world use vanadium steel.

In the railroad world Mr. Flannery was equally active and successful. His new stay bolts were approved, but he now looked beyond them. All locomotives have what is known as side frames. These are subjected to such varying and great stresses and strains that they were constantly breaking. Mr. Flannery made side frames of vanadium steel for many of the most powerful locomotives then under construction. Subjected to the most severe tests that mechanical ingenuity could devise these vanadium steel frames proved immeasurably superior; and, within a period that seemed astonishingly short, the American Vanadium Company was selling vanadium for the steel for practically all the locomotives of any importance in the railroad world.

HIS WORK WITH RADIUM

In 1909 a sister of Mr. Flannery was afflicted with cancer and the brother, in an effort to find a cure again went to Europe. He learned that radium alone might have helped her. It was impossible, however, to obtain sufficient radium in Europe and Mr. Flannery determined to make his own radium in this country.

The field was absolutely new. Those that knew anything of it were very few. What they knew was applicable to work with high grade ores—ores that contained a high percentage of uranium. The ores with which Mr. Flannery began and has had to continue his work are of such a low grade that from three to five hundred tons have to be treated in order to yield one gram.

For the treatment of this class of ore there was no known method. Mr. Flannery had to devise one. He withdrew from his Vanadium and other interests and devoted all his time to his self-imposed task.

His friends thought him foolish; his bankers felt that he was jeopardizing all that he had. But with a small staff and at great expense he adhered to his purpose and worked quietly and constantly for fourteen months. At last, in 1913, he and his staff obtained the first radium made in this country and in the Western hemisphere in the Laboratories of the Standard Chemical Company at Forbes and Meyran Avenues in this city. Unheralded in its conception and untalked of in its execution, this determination of Mr. Flannery that America should have its own radium gives to Pittsburgh and to the beautiful Vanadium Building, built by the Flannerys, a distinction that is unique and one that will have added interest with time.

From the first, the yearly production of radium by the Standard Chemical Company has steadily increased. Of Mr. Flannery's subsequent radium production, a scientific man, competent to judge, has written: "In the midst of industries whose total output is measured in thousands or millions of tons, an industry whose total output in nearly five years is about one ounce, is likely to seem small, yet this production of radium by the Standard Chemical Company, of Pittsburgh, is the most notable in the world. This is more than a third of the estimated stock of the world's most high purity radium, and to Joseph M. Flannery, more than to any other single man, belongs the credit and honor of starting and so establishing the manufacture of radium from low grade ores, that the Medical and Scientific professions may now count upon an ever increasing supply."

By a strange fortune, the United States Government, unwittingly, proved one of the greatest obstacles Mr. Flannery had to overcome in order to have his Company in a position to give the United States and the world a supply of radium.

Shortly after the first newspaper announcement that the Standard Chemical Company was producing radium in quantity, the U. S. Bureau of Mines, initiated a movement in Congress to have the Government exercise the right of eminent domain and

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take possession of all radium bearing ore lands, so that the Government would be the sole producer of radium. In support of this effort the claim was made and given wide publicity, that the amount of radium in the ores in the United States was very limited and that only the Government could make the necessary extraction. Time and money that should and would have gone into the perfection of his radium production had to be used by Mr. Flannery to defend the investments he had made in a field into which none else would venture.

While the first Congressional efforts in this direction were defeated, a second and even a third attempt was made by the Bureau of Mines, through action by the Congress, to have the Government take over all radium ore lands. As part of this effort Congressmen were asked to believe that the Bureau of Mines had actually produced radium far cheaper than Mr. Flannery could produce it and that the total amount of radium to be obtained in this country was so limited as to justify Government control.

Following the policy of giving facts as he had given them to Goethals and to Henry Ford and to the railroads when he was interested in vanadium, Mr. Flannery appeared before the Committees of Congress and refuted the Government's argument that the supply of radium to be obtained from American ores was limited. Unrolling before the view of the Committee of Mines and Mining of the Senate a carefully drawn map of his ore lands, Mr. Flannery invited examination of the fact that he had made hundreds of borings all over his lands. That each boring was marked for identification. That he had in his records a detailed statement of what was shown by each boring and that if the Committee did not care to trust his records he could produce the actual cores taken from these borings.

Since the production of his first radium the total amount produced by the Standard Chemical Company up to the time of Mr. Flannery's death, was about fifty-five grams. Last year his Company produced a total of nearly fourteen grams.

The World War tested the organization and the worth to the United States and to the Allied Powers, of the Standard Chemical Company.

The Allied Powers asked the Council of National Defence whether America could supply them with radium. The Council made a careful study and the Allies were informed that the Standard Chemical Company of Pittsburgh was able to meet all their needs and to maintain the supply necessary for the United States.

URANIUM STEEL

To uranium as an alloy for steel, Mr. Flannery had given a great deal of thought and attention during the last two years. The conditions imposed by the demands of the war had held back experiments he had decided upon just as the world's peace was broken.

About a year ago, however, he proved that Uranium has a well deserved place as an alloy for improving cutting tool steel, and due to his efforts it is now being used in that field very extensively.

HIS LAST WORK

Through the Rosanoff Process Company, which he organized and directed, Mr. Flannery entered an entirely new and important field of commercial activity.

Gasoline has been made for years by a slow and inefficient process. Doctor Rosanoff, then of the Technical Staff of the Mellon Institute, of Pittsburgh, brought to Mr. Flannery some years ago what seemed a new and practical method for greatly increasing the quantity of gasoline obtainable from crude oil with a marked reduction in the time and cost for making this important product. Mr. Flannery agreed to finance his experiments and in this development he gave generously of his time and money.

When the United States entered the World's War the process had just been perfected and Mr. Flannery, as President of the Rosanoff Process Company, immediately offered the method to the Fuel Administrator. The reports of the U. S. Bureau of Mines and the studies of the Gasoline expert of the Fuel Administrator were all favorable, but the signing of the Armistice and the relinquishment by the Government of its control over gasoline made it impossible for the Government to go further in having this new process applied in a commercial way.

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Because of the interest in it of practical oil men, Mr. Flannery went to New York a few weeks before his death, for a conference with some financial men about this new method. His physicians advised him against the effort and urged him to go to California and rest. This he promised to do as soon as he returned from his New York visit.

That effort to give the commercial world the process in which he had such faith, proved his last. He was never able to leave his room after his return from New York and he died before he could learn the tangible results of his last work.

HIS CHARACTER

Original in his conceptions, daring in his execution of them, Joseph M. Flannery's far vision and his practical performances, have given him a deserved place among the business men who have made Pittsburgh world famous. His record is a personification of the motto of the commercial men of this city, "Pittsburgh Promotes Progress."

To his immediate business staff and his assistants, his personality was a power and an influence. Self educated, he had so studied that he talked with a knowledge and a clarity of view that was exceptional. In his chosen fields of business, he so mastered all the details of his subject that he could and did hold the interest of technical and professional men. When he reached the limit of his knowledge he stopped. He never pretended. He had a passion for facts and for analyzing them. For untruth, personal or scientific, he was intolerant with all the power of his nature. In his friendships he was generous to a fault. To those he trusted, he gave full measure of faith, but to one who once forfeited that faith, he was unforgiving.

While he tied men to him by his sympathy and his thought for their success, his constant personal modesty, his driving power in the accomplishment of the work of the moment and the quickness and generosity with which he showed his appreciation for all that was done either for him or for themselves, are the factors that made Joseph M. Flannery's friendship an inspiration and his death a personal loss to all that knew and worked with him.

Following his death the press of Pittsburgh gave editorial space to mention the character and the work of Joseph M. Flannery.

Expressing as they do the views of influential newspapers representing widely different local interests, these editorials are here reprinted as giving an impartial measure of the regard in which Mr. Flannery was held in the city to whose renown his work has added lustre.

RADIUM

The Pittsburg Leader

February 19, 1920

EDITORIAL

JOSEPH M. FLANNERY

It is when the death of such a man as Joseph M. Flannery falls upon a community whose interests were made one with his own distinctive success, that the full force of a great loss is felt. If Mr. Flannery was not one of that grand group of pioneers who built and guided the growth and power of Pittsburgh—he was too young for that—he was one of that later element which carried Pittsburgh far into the front rank of modern industrial producers. And none of the older men who sensed the future of the town they had selected as the field of their progressive labors had a finer, a clearer, or a greater vision of his own usefulness and pride in the achievements of his home city than Mr. Flannery. In fact in most respects the vision of the younger man was wider and faced by more and greater obstructions than that of the generation which preceded him.

Mr. Flannery saw what was denied others. He saw success and progress for himself and his native city where others saw nothing. He strode boldly into a new field until then unexplored and holding nothing except the promises of his own vision. In his own way Mr. Flannery was a pioneer even greater than some of the older men in Pittsburgh's industry, for he deliberately chose the field of difficult labor and hazardous enterprise.

His position as the directing force of the Standard Chemical Company, which gave service of inestimable value to the nation during the war, is its own monument to his tremendous energy, his foresight, his patriotism. His share in the development of vanadium production and its ultimate general use in the manufacture of steel was distinction enough for any man, but his work in the production of radium placed him among that long list of industrial genii upon whose devoted industry rests the structure of civilization.

His life was notable in its successes achieved within far fewer years than are marked opposite the records of many great men. When such a man dies at a relatively early age, the community in which he lived realizes one of the cruel misfortunes of death. It is at such a time that we are grieved that a man like Joseph M. Flannery should ever pass away.

The Pittsburgh Post

February 19, 1920

EDITORIAL

JOSEPH M. FLANNERY

Joseph M. Flannery, who died yesterday morning, was of the caliber of men who have made Pittsburgh world-renowned and illustrated American opportunities. Starting with nothing but ability, he demonstrated by his rise from an humble position to a lofty height as a creator of industries that ability rightly applied and supported by courage and determination is always assured of a rich reward in this country. Possessed to a rare degree of constructive genius and a passion for discovering new methods, his career in many respects has the thrill and fascination of romance. He was of the type of revolutionist against old methods in the interest of progress and the development of industries. Only 52 years of age at his death, he had heard in his youth as many of the boys of today that "the period of opportunity" for young men of limited means is past; yet he not only found new fields to explore, but created new industries—in vanadium and radium—that add to the glory of his city and its opportunities. He not only found opportunities in abundance, but he made them. It appears a long step from the undertaking business, in which he started, to the production of an article that sells for more than \$127,000 a gram and with a year's output of 18 grams a record of which to boast. Such is the radium industry that this man created after the age of opportunity was supposed to have been passed, and almost as wonderful as his participation in the vanadium business that has revolutionized steel-making. His genius, however, was not alone manifest in the improvement of manufacturing processes; he was a good organizer, starting a number of companies and taking a prominent part in the direction of others.

Thus the career of Joseph M. Flannery, the man who found new fields and made opportunities, is one that cannot be cited too often to young men who talk of being discouraged by the outlook. The memories of such men are assured of grateful remembrance. They prove the continuance of opportunities and so death does not end their usefulness.

THE PITTSBURGH SUN

February 19, 1920

EDITORIAL

HE SOUGHT WAYS TO SERVE

In the death of Joseph M. Flannery not only Pittsburgh, but the world, loses a great pioneer and a good servant. In this may be found the secret of his triumphant rise against adversity—that he labored for no mere selfish purpose, but for all mankind. His was the restless, striving, daring spirit of the type that has written large the name of Pittsburgh in the records of achievement. And in distinctive degree did he possess that purity of motive that redoubles strength. Whether in vanadium or in radium, Mr. Flannery was inspired by no merely casual hope for gain. In the one case it was to improve a product, in another to minister to a stricken sister's need that set him forth upon his quest.

Riches came to him. But they were riches blest as the reward for direct benefit to his fellowmen. They were riches that America is ever eager to pour at the feet of him who will serve her. Today as yesterday, the explorer of the unknown, in the arts or sciences, or in whatever field of activity, is assured of the completest recompense. The gates of opportunity are ever open to the man with eyes to see and the courage to enter.

Imagination, a flaming spirit, a love of his family and his fellowman—these were the outstanding qualities of Joseph M. Flannery. His life points the way to triumph to every man—that he seek ways to serve and falter not.

THE GAZETTE TIMES

February 19, 1920

EDITORIAL

DEATH OF JOSEPH M. FLANNERY

In the death of Joseph M. Flannery Pittsburgh loses a citizen whose life success, a success coming to him in large measure, was due to his vision in discerning obscured possibilities. While he was associated with his brother in the development of vanadium and this brought him wealth, it is through the production of radium that his distinction in the business world is due. He was the head and guiding genius of the Standard Chemical Company, which rendered great service to America and the Allies during the war in providing over half the radium required for luminous watch dials and other purposes. Thus a distinction came to Pittsburgh in this respect that would have been denied except for the genius of Mr. Flannery. In his interest in other enterprises with which he was associated, and they were numerous, he ever worked to promote the prosperity and progress of his native city. His was a notable career and though dying in comparatively early life the record of his achievements is evidence that his years of active life were crowded with effort of high productiveness. His record of success is evidence of possibilities that exist in this great industrial community, if one has the eyes to see and the ability to recognize opportunity when presented.

STANDARD CHEMICAL COMPANY

PITTSBURGH, PA.



*General Offices and Radium Research Laboratory,
Standard Chemical Company, Pittsburgh, Pa.*

**Miners of Uranium and Vanadium Ores,
and Producers of Radium**

STANDARD CHEMICAL COMPANY
